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CAPACITY-BUILDING

CAPACITY-BUILDING IN DEVELOPING COUNTRIES (NON-ANNEX I PARTIES)

Compilation and synthesis of information on capacity-building needs and priorities of developing countries (non-Annex I Parties)

Note by the secretariat

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Annex

Summary table of information on capacity-building needs of non-Annex I Parties 21

I. MANDATE

1. The Conference of the Parties, by its decision 10/CP.5,[1] requested the secretariat:

(a) To compile information contained in initial national communications of non-Annex I Parties relating to capacity-building activities, programmes and needs, and to make it available in both printed and electronic formats prior to the twelfth session of the subsidiary bodies;

(b) To compile information contained in national communications of Annex II Parties on activities and programmes implemented to facilitate capacity-building in developing countries relevant to the implementation of the Convention;

(c) To further elaborate the specific capacity-building needs and priorities of non-Annex I Parties, taking fully into account the list provided by those Parties and contained in the annex to decision10/CP.5 and the results of the inter-sessional workshops, including workshops on the consultative process for technology transfer, held prior to the twelfth sessions of the subsidiary bodies.

II. SCOPE OF THE NOTE

2. This note is based on the following sources of information:

(c) Initial national communications of the following 23 non-Annex I Parties submitted prior to 1 March 2000: Argentina (ARG), Armenia (ARM), Chile (CHL), the Cook Islands (COK), Egypt (EGY), Georgia (GEO), Indonesia (IDN), Jordan (JOR), Kazakhstan (KAZ), Kiribati (KIR), the Republic of Korea (ROK), Lebanon (LBN), Mauritius (MUS), Mexico (MEX), the Federated States of Micronesia (FSM), Nauru (NRU), Samoa (WSM), Senegal (SEN), Tuvalu (TUV), Uruguay (URY), Uzbekistan (UZB), Vanuatu (VUT) and Zimbabwe (ZWE);

(d) Submissions of the following five non-Annex I Parties: Bolivia (BOL), Brazil (BRA), Samoa (on behalf of the Alliance of Small Island States (AOSIS), Sri Lanka (LKA) and Uzbekistan, as contained in document FCCC/SB/2000/INF.6;

(e) The results of inter-sessional workshops, of which only the three regional workshops on the consultative process for technology transfer held in Africa, Asia and the Pacific, and Latin America and the Caribbean are relevant to this document.[2]

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[1] For the full texts of decisions adopted by the conference of the Parties at its fifth session, see document FCCC/CP/1999/6/Add.1.

[2] The Africa workshop was held on16-18 August 1999 in Arusha, United Republic of Tanzania; the Asia and the Pacific workshop on 17-19 January in Cebu, the Philippines; and the Latin America and the Caribbean workshop on 29-31 March 2000, in San Salvador, El Salvador.

3. Section III of this note outlines the approach used in compiling the information. Section IV presents a synthesis of the compiled information. Section V briefly summarizes the capacity-building activities reported in the initial national communications and the submissions. Section VI presents conclusions based on the synthesized information.

III. APPROACH TO THE COMPILATION AND SYNTHESIS

4. In compiling and synthesizing the information, the secretariat took note of the term "capacity-building" as defined in Agenda 21: "Capacity-building encompasses the country's human, scientific, technological, organizational, institutional and resource capabilities. A fundamental goal of capacity-building is to enhance the ability to evaluate and address the crucial questions related to policy choices and modes of implementation among development options, based on an understanding of environmental potentials and limits and of needs as perceived by the people of the country concerned."[3]

5. Further, the secretariat took note of the provisions relating to capacity-building for developing countries contained in decisions 10/CP.2, 11/CP.2, 9/CP.3, 2/CP.4, 4/CP.4, 5/CP.4, 6/CP.4, 7/CP.4, 12/CP.4 and 14/CP.4, as recalled by decision 10/CP.5.

A. Information from initial national communications

6. The guidelines for the preparation of initial communications by non-Annex I Parties contained in decision 10/CP.2 (FCCC/CP/1996/15/Add.1) do not specifically request information on capacity-building needs and priorities. Instead, the guidelines provide that non-Annex I Parties "may describe the financial and technological needs and constraints" associated with (i) the communication of information and further improvement of national communications, including reduction of the margin of uncertainty in emission and removal variables through appropriate institution and capacity-building; (ii) activities and measures envisaged under the Convention; (iii) measures to facilitate adequate adaptation to climate change; and (iv) needs relating to the assessment of national, regional and/or subregional vulnerability to climate change, which may include, where appropriate, information related to data-gathering systems to measure climate change effects or to strengthen such systems; and identification of a near-term research and development agenda to understand sensitivity to climate change.

7. All of the reporting non-Annex I Parties included information on their financial and technological needs and constraints in their initial national communications, although some did so more systematically than others. For the purposes of this note, information relevant to

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[3] Report of the United Nations Conference on Environment and Development, Vol. I, Agenda 21, Chapter 37 (A/CONF.151/26/Rev.1).

capacity-building was derived from the financial and technological needs and constraints expressed by non-Annex I Parties in their initial national communications.

8. Some non-Annex I Parties, particularly those from the Pacific island States (COK, FSM, NRU, TUV, VUT, WSM), reported specific capacity-building needs and priorities in their initial national communications. In these cases, the process of compiling and synthesizing information relevant to capacity-building was relatively straightforward.

9. Furthermore, in accordance with Article 12.4, some non-Annex I Parties included information on projects[4] proposed for financing. All of the proposed projects implied capacity-building needs, some of which may have been identified in this note.

B. Information from submissions of non-Annex I Parties

10. Information submitted by the non-Annex I Parties to elaborate their capacity-building needs and priorities was focused and generally built upon the list of needs in the annex to decision 10/CP.5.

11. Due to the limited number of non-Annex I Parties which provided information, the capacity-building needs and priorities identified in this note can not be considered exhaustive.

IV. SYNTHESIS OF COMPILED INFORMATION

12. Following the approach described above, capacity-building needs of the reporting non-Annex I Parties were identified in the following areas. Some of the needs listed in the annex to decision 10/CP.5 such as coordination and cooperation, improved decision-making and institutional capacity-building, cut across many of the areas.

(a) UNFCCC and Kyoto Protocol processes

(b) National communications[5]

(c) Greenhouse gas (GHG) inventory

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[4] Paragraph 17 of the annex to decision 10/CP.2 provides that non-Annex I Parties "may, in accordance with Article 12.4, on a voluntary basis, propose projects for financing, including specific technologies, materials, equipment, techniques or practices that would be needed to implement such projects, along with, if possible, an estimate of all incremental costs, of the reductions of emissions and increments of removals of greenhouse gases, as well as an estimate of the consequent benefits."

[5] Initial national communications should include information on national circumstances, the GHG inventory and a general description of steps taken or envisaged to implement the Convention (decision 10/CP.2). However, for the purposes of this note, some areas related to national communications are treated separately (i.e., GHG inventory, vulnerability and adaptation assessment, abatement options analysis, research and systematic observation and public awareness).

(d) Vulnerability and adaptation assessment

(e) Abatement options

(f) Research and systematic observation

(g) Public awareness

(h) Development and transfer of technology

(i) Clean development mechanism (CDM.)

13. In each of the areas mentioned above, the specific capacity-building needs of the reporting non-Annex I Parties relate to the building, strengthening, enhancement and improvement of some or all of the following:

(a) *Institutions*, which include national authorities designated to coordinate climate change activities, public and private institutions, academic, technical and research institutions, non-governmental organizations (NGOs) and communities as well as regional institutions;

(b) *Human resources*, which include staff and experts in public and private institutions, and the development of knowledge, skills and expertise in various disciplines related to climate change;

(c) *Methodology*, which include systematic methods, approaches and practices in various areas;

(d) *Technology and equipment*, which relate to databases, communication, information management, analytical models, monitoring, testing, mapping and geographic information systems, including hardware, software, and know-how;

(e) *Information and networking*, which include information and communication technologies (hardware and software), programmes and networks to effectively facilitate the flow and exchange of information, experience and resources.

14. The succeeding subsections summarize the needs of the reporting non-Annex I Parties in each of the areas identified in paragraph 10 using the "elements of capacity" listed above. The annex table in this note summarizes this information by Parties. The absence of a Party in any of the cells in the table indicates that no information was provided.

A. General needs related to the UNFCCC and Kyoto Protocol processes

15. Several non-Annex I Parties[6] expressed the need to strengthen their institutions, develop their human resources and benefit from information sharing and networking, so as to enable them to fully implement their commitments under the Convention and the Kyoto Protocol, and to effectively participate in the intergovernmental process. More specifically, these needs include:

(a) Establishment and strengthening of *national institutions* such as national climate change committees and/or technical or expert teams to coordinate climate change activities, including coordination in regional and international climate change activities;

(b) Strengthening of key academic, scientific, technical and research institutions and non-governmental organizations, including their management and administrative structures, for undertaking tasks relating to the implementation of the Convention;

(c) Strengthening, promoting and enhancing of coordination and participation of key stakeholders at the community, local, national and regional levels, including in relevant UNFCCC and Kyoto Protocol processes;

(d) Enhancement of capacity for policy-making and planning, linking science and policy, integrating climate change policies in national development strategies and plans, and institutionalizing integrated social, environmental and development planning;

(e) Enhancement of the analytical capacity of experts, policy- and decision-makers to better link the technical and policy issues related to climate change;

(f) Promotion of academic and professional exchange programmes among Parties (among non-Annex I Parties and between Annex I and non-Annex I Parties);

(g) Provision of fellowships and scholarships to climate change negotiators for specialized training at higher levels, so as to raise their awareness and enhance their knowledge and skills in all issues related to climate change, including their understanding of the provisions of the Convention and the work of its Conference of the Parties and subsidiary bodies;

(h) Expansion of opportunities to organize workshops at the national and regional levels for all stakeholders, including policy- and decision-makers, the private sector, technical experts, NGOs, and local communities to facilitate consensus-building regarding issues relevant to the implementation of the Convention;

(i) Establishment of national or regional clearinghouses for information sharing and networking on climate change issues.

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[6] BOL, BRA, IDN, LKA, WSM on behalf of AOSIS

16. In addition, Samoa stated that AOSIS member States need to strengthen and increase the staff of their national delegations which participate in the UNFCCC and Kyoto Protocol processes. At the country level, AOSIS member States "need to build up a pool from which to recruit future experts", including "a need for temporary expertise while staff is away on training programs".

B. General needs related to national communications

17. Many non-Annex I Parties reported difficulties and constraints associated with the preparation of their initial national communications. These include limited financial resources, lack of well-defined national strategies and policies, lack of a national coordination framework, lack of equipment, facilities, expertise and data, and difficulty in accessing information from relevant sources.

18. Some non-Annex I Parties requested assistance, including institutional and technical training, to identify projects, carry out specific studies, and define, develop and implement national climate change action plans as part of the preparation of national communications. Some Parties also indicated the need to maintain and enhance national institutional and technical capacities for future national communications.

19. The Pacific island countries are particularly concerned about significant costs associated with the field work required to support some of the national communication activities, such as high travel costs and also the "hidden" costs associated with prolonged stays due to the infrequency of flights or ships travelling between the islands. High travel costs have also constrained the participation of their limited technical personnel in regional and international activities.

C. Needs in carrying out greenhouse gas inventories

20. Most non-Annex I Parties reported difficulties in preparing their GHG inventories. Some of these difficulties were reported earlier (see FCCC/SBI/1999/7.1, FCCC/SBI/1999/INF.7 and FCCC/SBI/1999/INF.10). The specific difficulties and needs include the following:

(a) Improvements in infrastructure, equipment and facility (BRA, CHL, COK, FSM, KIR, LKA, NRU, TUV, VUT, WSM);

(b) Enhancement of local technical capacity and expertise in data collection, analysis, management, maintenance, reporting and dissemination through adequate training (CHL, COK, FSM, KIR, LKA, NRU, TUV, VUT, WSM);

(c) Establishment of reliable and effective GHG inventory database systems (IDN, UZB, WSM, ZWE);

(d) Promotion and cooperation in the development of a climate change data bank on the Internet, with information and emission inventories, and steps taken to implement the Convention (BRA);

(e) Improvement in data quality (accuracy and reliability) in various key socio-economic sectors, especially in the land-use change and forestry sector where data are lacking or highly uncertain (ARG, CHL, COK, FSM, GEO, IDN, KAZ, KIR, MUS, NRU, ROK, SEN, TUV, URY, VUT, WSM, ZWE);

(f) Improvement in GHG emission projections (GEO);

(g) Development of country-specific methodologies to estimate emission factors in relevant sectors to improve IPCC methodology (ARG, ARM, BRA, CHL, COK, FSM, IDN, JOR, KIR, LKA, MEX, NRU, ROK, TUV, URY, UZB, VUT, WSM, ZWE);

(h) Investigation of current and potential carbon sinks of coral reefs and marine ecosystems, which are not considered by the Intergovernmental Panel on Climate Change (IPCC) methodology at present (FSM);

(i) Promotion of national and regional networking and international workshops to exchange information and share experience on inventory preparation (BRA).

21. Some non-Annex I Parties stressed the importance of continuous and sustained collection of data, maintaining a stable national inventory team, and expanding the scope of their original inventories by including other GHGs such as nitrogen oxides (NO_x), carbon monoxide (CO), non-methane volatile organic compounds (NMVOC), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulphur hexafluoride (SF_6).

22. Egypt expressed the need for (i) modelling GHG emissions in the agricultural sector, especially the estimation of carbon fraction in rice fields; and (ii) a comprehensive study for measuring and monitoring methane emissions from exploitation, transmission and distribution in its petroleum sector.

23. Indonesia implied needs related to the prevention of forest fires through the utilization of early warning systems in areas prone to forest fires, development of an integrated system to manage forest fires, preparation of local communities to fight forest fires and by requiring fire fighting task forces for forest concessionaires.

24. Some Parties (ARG, ARM, CHL, JOR, KAZ, ROK, SEN, URY, ZWE) applied procedures that could be regarded as good practices in order to improve the quality of their data. The IPCC is currently developing guidance on good practices, including uncertainty management, in national GHG inventories, so as to improve their quality. It is expected that capacity-building will be needed to promote and disseminate this guidance.

D. Needs in vulnerability and adaptation assessment[7]

25. Vulnerability and adaptation assessments usually cover a number of key socio-economic sectors, such as water resources, agriculture, forestry, coastal zones, fisheries, human settlements, human health and natural ecosystems. These involve the collection and analysis of climatic, environmental, social and economic data; the application of computer models (e.g., general circulation models (GCMs), impact models), and the interpretation of results. Significant financial, human and technological resources are required to undertake such a complex, inter-disciplinary and research-oriented task.

26. Due to financial and human resources constraints, most non-Annex I Parties reported vulnerability and adaptation assessments only for selected socio-economic sectors (e.g. water resources, agriculture, forestry, fisheries, coastal resources, human settlements, and human health). The assessments were based mostly on the regional climate change scenarios for a doubling of CO_2 generated by the GCMs, the outputs of which were then compared with long-term observed climatic data in some cases. Some non-Annex I Parties (MEX, URY, ZWE) used crop models to assess the impacts on agriculture. Chile used local models, while some other non-Annex I Parties used expert assessments.

27. Most assessments, especially the adaptation component, were preliminary and limited in scope. In general, Parties reported many gaps in data and methodology. In order to improve assessments, it is necessary to strengthen national and regional institutions, build up national and regional expertise through training, improve methodologies for local conditions, expand the scope of assessment to include a full range of key socio-economic sectors specific to countries, and exchange information and share experience through workshops and networking. The specific capacity-building needs include the following:

(a) Enhancement of multi-disciplinary technical expertise (LKA), of expertise in oceanography (COK), and of cooperation and partnerships with international institutions on the application of GCMs (BRA);

(b) Improvement of data collection, analysis, management, maintenance, reporting and dissemination, including upgrading of relevant infrastructure and equipment (hardware and software) (CHL, FSM, WSM);

(c) Improvement of data quality; refinement of existing methodology and development of appropriate methodologies for local condition (BOL, CHL, KIR); development of regional climate models for the Nile basin and linkage of climate models to hydrological

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[7] Paragraph 15 of the annex to decision 10/CP.2, requests non-Annex I Parties to provide information on "policy options for adequate monitoring systems and response strategies for climate change impacts on terrestrial and marine ecosystems" and "policy frameworks for implementing adaptation measures and response strategies in the context of coastal zone management, disaster preparedness, agriculture, fisheries, and forestry, with a view to integrating climate change impact information, as appropriate, into national planning process". Vulnerability and adaptation assessments contribute to the development and formulation of such information.

models (EGY); application of predictive computer modelling and integrated assessment modelling;

(d) Expansion of the scope of assessments to include other key sectors and important aspects where no or limited work has been done. For example, Chile has identified a number of areas for further work, including (a) the coverage of more crop varieties, changes in planting dates and the feasibility of relocation; (b) evaluation of the impact on protected wildness areas; (c) improved understanding of the impact of water and heat conditions on native forest species and on the advance of desertification and erosion in certain parts of the country. Both Lebanon and the Federated States of Micronesia proposed investigations of salt-water intrusion in coastal areas, while Brazil proposed a study on the vulnerability of human populations who live on arid and semi-arid lands;

(e) Improvement of integrated coastal zone management, including more advanced and sophisticated equipment for monitoring, especially coastal erosion (KIR, LKA, MUS);

(f) Sharing and exchange of information through national, regional and international workshops, access to the Internet (COK);

(g) Development of adaptation options and strategies (BRA, COK, FSM, KIR, LKA, NRU, TUV, VUT, WSM), including determination of appropriate adaptation technologies, particularly in coastal zone management, forestry monitoring system and ocean observing system (LKA), consolidation of endogenous knowledge in order to identify technologies for adaptation (UZB), and development of adaptation project guidelines.

28. The Pacific island countries noted that the training programme in vulnerability and adaptation assessments under the Pacific Islands Climate Change Assistance Programme (PICCAP) has "significantly built the capacity" of the countries. Similar regional training programmes may be needed for other regions.

29. Most non-Annex I Parties elaborated on their needs for further research in order to study their vulnerability more comprehensively. Some proposed projects such as ecological baseline studies under both controlled and field conditions (LBN); improvement of groundwater storage (ZWE), more drought-tolerant and disease-resistant crops and livestock (ARM, MUS, ZWE), evaluation of climate variability and climate change on the movement of tuna and other pelagic fisheries (FSM), climate variability and extreme events, local effects of tectonic processes and sea level change scenarios for small island countries (VUT, WSM), studies on extreme weather events in order to detect changes in the intensity and seasonal and geographical distribution of common weather hazards, such as floods and droughts, with a view to strengthening adaptive capacity (BRA), improved predictions of extreme events to assure preparedness, thus reducing impacts (WSM), better understanding of the linkage between climate change and human health (WSM, TUV), agricultural productivity of different crops and crop varieties, incidence of disease vectors and water supply (VUT), a modelling approach to assess the vulnerability and adaptation of sugar cane to different climate change scenarios (MUS).

30. Some Parties expressed the need to link the findings of preliminary vulnerability and adaptation assessments to the requirements for adaptation (WSM on behalf of AOSIS).

E. Needs in abatement options analysis[8]

31. Some non-Annex I Parties (ARM, CHL, GEO, KAZ, UZB) provided detailed information on their analysis of abatement options in their initial national communications, while others described their abatement options without any analysis.

32. The Federated States of Micronesia identified some constraints in analysing its GHG abatement options, which may be shared by other non-Annex I Parties. These include the lack of detailed, easily-accessible information on renewable energy potential in the country, limited access to new technologies and the limited expertise in the use of those technologies, financial and human costs associated with the acquisition and maintenance of new technologies, dependence of existing energy infrastructure and transportation systems on petroleum consumption; and the need to balance economic development goals - particularly in emerging sectors like tourism.

33. Although the reported abatement options reflect an individual Party's specific needs and priorities (e.g., Zimbabwe expressed the need for improved wood stoves, low mass stoves, coal stoves and bio-gas digester, as well as energy efficiency in small-scale industries), some needs are common to most of the reporting non-Annex I Parties. These include research and abatement options analysis in various key socio-economic sectors (e.g., the development and application of user-friendly analytical tools and integrated assessment methodology), energy efficiency in key socio-economic sectors such as power plants, industry, the residential sector and transport (JOR, KAZ, WSM), renewable resources inventory and computerized database, development and implementation of renewable energy projects (e.g., solar, wind, hydro/mini-hydro, geothermal, biogas, ocean waves), including installation, maintenance, trouble-shooting and repair (GEO, JOR, KAZ, KIR, WSM), sink enhancement (afforestation; reforestation; coral reefs) (FSM, IDN), development of an appropriate regulatory and legislative framework, exchange and sharing of experience, practices and processes regarding emission reductions (BRA).

34. Twelve Parties (ARM, CHL, EGY, FSM, GEO, JOR, KIR, LBN, MUS, UZB, VUT, ZWE) proposed projects for financing, which may imply capacity-building needs.

F. Needs in research and systematic observation

35. All of the reporting non-Annex I Parties included information on their activities related to the implementation of Article 5 of the Convention (research and systematic observation). The needs related to research in GHG inventory, vulnerability and adaptation assessment and the

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[8] Paragraph 15 (e) of the annex to decision 10/CP.2 requests non-Annex I Parties to provide information on programmes containing measures that contribute to addressing climate change and its adverse impacts, including the abatement of increase in GHG emissions and enhancement of removals by sinks.

analysis of abatement options have been mentioned above. Other needs related to research and systematic observation include:

(a) Staff training on the use of satellite monitoring equipment (EGY);

(b) Updating of maps to make them more reliable (FSM);

(c) Collection, review, update, processing and effective dissemination of climatic data (LBN, KIR, ZWE);

(d) Rehabilitation and expansion of the climate station network (LBN);

(e) Climate baseline studies (NRU), including establishment of baseline monitoring stations (CHL, FSM, LKA); climate change and sea level national monitoring centre (KIR);

(f) Establishment of a coral reef monitoring programme to evaluate the degradation of coral reef (bleaching) on a regular basis (EGY, FSM, MUS, WSM); rate of coral growth and sand production and the ability of coral reefs and islands to keep up with sea level rise (TUV);

(g) Research on climate change and sea level rise specific to the country (ARG, KIR, MUS, TUV, VUT, WSM on behalf of AOSIS);

(h) Studies on water resources (KAZ, KIR), including systems to monitor water resources (ARM), and groundwater storage (ZWE);

(i) Monitoring of mountain glaciers (UZB);

(j) Study of extreme events such as tropical cyclones and monsoons (MUS);

(k) Development of early storm surge and early cyclone warnings (COK);

(l) Better understanding of the El Nino Southern Oscillation (ENSO) and modelling of its effects on weather patterns throughout the archipelago (VUT);

(m) Participation in the Global Climate Observing System, Global Terrestrial Observing System, Global Ocean Observing System (EGY); and the application of remote sensing to climate change (EGY);

(n) Promotion of research cooperation between developing and developed countries, and between national and international research organizations (KIR).

G. Needs in public awareness

36. Most non-Annex I Parties reported their initiatives, programmes and activities related to the implementation of Article 6 of the Convention (education, training and public awareness). Some (ARM, EGY, FSM, MUS, NRU) provided extensive information. The public awareness activities reported by some non-Annex I Parties varied from broad information on climate change and its effects to specific issues, such as the benefits of certain mitigation and adaptation options (KAZ, MEX, MUS, SEN, URY, ZWE), energy conservation (JOR, ROK) and natural resources conservation (FSM, JOR, ROK). Although most of the awareness activities reported were oriented towards the general public, some Parties also reported special awareness campaigns targeting specific groups such as local communities (FSM, MUS, ROK, ZWE), government officials (ARM, FSM, ZWE), the industrial sector (ROK, ZWE) and professionals (URY, ZWE).

37. The specific needs identified include the following:

(a) Development and/or strengthening, and implementation of educational, public awareness and outreach programmes targeted at all stakeholders in the public and private sectors, policy- and decision-makers, key socio-economic sectors, educational institutions, NGOs, and communities (FSM, TUV);

(b) Development and production of educational (e.g., school curriculum) and public awareness materials that cover all aspects of climate change and its effects, including policy; legal, scientific (climate change impacts), technical (e.g., specific adaptation and mitigation options) and technological (energy conservation and efficiency; renewable energy; adaptation technologies) information;

(c) Dissemination of information, including research information from the IPCC reports and issues related to the UNFCCC and Kyoto Protocol processes, through various effective means, such as pamphlets, brochures, newsletters, published studies, information kits, educational material, CD-ROM, the Internet (web page), audiovisual material, radio and television programmes;

(d) Consolidation and fostering of public participation in developing and implementing climate change activities (KIR);

(e) Holding of national, regional and international forums to share experience and lessons learned;

(f) Translation of relevant information and publications (e.g. IPCC reports) from English into national languages;

(g) Establishment of a clearing house on data and information related to climate change issues and encouragement of improved agricultural practices through public campaign as well as developing a public information network for agricultural technology (IDN);

(h) Increased use of geographic information systems, including software and advanced training, to create layered resource maps to help planners update and fine-tune their awareness of vulnerabilities on a periodic basis (MUS);

(i) Strengthening of existing awareness programmes that are already being successfully implemented in the country, such as programmes for improving energy efficiency in the production and consumption of electricity and for the rational use of oil and natural gas derivatives (BRA).

H. Needs in the development and transfer of technologies

38. The reporting non-Annex I Parties expressed the general need for the development and transfer of technologies[9] (defined broadly as hardware, software and know-how) to address both their mitigation and adaptation needs. Many non-Annex I Parties also expressed the importance of increasing access to new technologies, adapting foreign technologies to local conditions, strengthening local research institutions, and enhancing national expertise for developing local technologies (BRA, FSM, IDN, WSM).

39. The results of the three regional workshops (see documents FCCC/SBSTA/1999/11, FCCC/SBSTA/2000/INF.2, and FCCC/SBSTA/2000/INF.6) on the consultative process for the transfer of technology provided some insight into the capacity-building needs and priorities of non-Annex I Parties. Based on the results of the workshops, it appears that all regions share similar needs, though with different priorities. For example, many African countries were unable to report on specific technology needs due to a lack of the human and organizational capacities required to conduct adequate technology needs assessments, while several countries in the Asia and the Pacific region have already completed needs assessments and/or compiled a list of technology needs. In Latin America and the Caribbean, some analysis of abatement options has been undertaken, though few detailed abatement and adaptation technology needs assessments have been undertaken. However, the need to build or strengthen the requisite institutional and human capacities, through appropriate information networks, is well recognized in all regions.

40. Unless otherwise specified, the capacity-building needs summarized below from the results of the regional workshops are common to all regions. Some of these needs have been identified in decisions 2/CP.4 and 4/CP.4.

(a) Strengthening of institutional and human (technical) capacities to (i) identify technology needs and undertake country-driven needs assessment, prioritization, planning, monitoring and evaluation; (ii) assess appropriate technologies, including the assessment of existing absorptive capacity; analysis of technology impacts; analysis of anticipatory adaptation technologies and measures to promote their use; (iii) support and manage imported technologies; including technology testing, certification and labelling (Latin America

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[9] See also decision 4/CP.4 (FCCC/CP/1998/16/Add.1).

and the Caribbean); (iv) adapt and develop technologies for local needs, including the use and enhancement of existing endogenous capacities and technologies by involving local experts, institutions and communities; (v) design and implement policy, regulatory and institutional reforms (Latin America and the Caribbean); (vi) analyse constraints and barriers to the transfer of technology; (vii) undertake research and development in the country and the region; (viii) identify and monitor the secondary benefits to mitigation and adaptation related to policies and measures, such as local environmental and health benefits (Latin America and the Caribbean); (ix) protect intellectual property (Latin America and the Caribbean); and (x) help countries formulate, integrate and implement national energy and environmental policies (Africa);

(b) Establishment of a national framework for technology transfer, including the identification of focal points for the transfer of environmentally sound technologies (ESTs), to facilitate stakeholder participation (Latin America and the Caribbean), establishment of technology transfer desks (Africa) or technology units (Latin America and the Caribbean), establishment of an intergovernmental advisory panel (Latin America and the Caribbean);

(c) Strengthening of educational institutions (Africa), management consulting sector, energy service companies, investment product rating and legal service providers (Latin America and the Caribbean);

(d) Enhancement of endogenous capacity and capabilities for technological and socio-economic research and development; enhancement of regional capacity to adapt imported technologies to local conditions; and support for research and development programmes and cooperation within the country and the regions;

(e) Establishment of national and/or regional cleaner production centres and centres for innovation and enterprise development or their equivalents (Africa);

(f) Building of capacity through technology demonstrations and commercial pilot projects (Asia and the Pacific); and establishment of international technology demonstration centres in developing countries (Latin America and the Caribbean);

(g) Greater coordination among, and use of, various existing mechanisms including bilateral assistance, multilateral efforts, regional organizations, the private sector, NGOs, academics and research institutes;

(h) Promotion of an integrated approach to link technology diffusion and transfer, development, energy, the environment and natural resources (Africa);

(i) Strengthening of existing biomass activities, networks and projects (Africa);

(j) Promotion of an enabling environment to remove informational, financial, economical, technical, technological, institutional and political barriers (Asia and the Pacific);

(k) Provision of training programmes targeted at the public and private sectors, including national utilities, the banking and finance sector, NGOs, and the local community. The scope of training may include: technologies or practices which improve productivity and generate incomes, particularly among the rural poor; enterprises which specifically contribute to the transfer of technologies across national borders; projects which allow Africans to take equity partnerships in cleaner production businesses (Africa);

(l) Assistance for the development of partnerships between the private sector and NGOs (e.g. joint ventures) and assistance to NGOs to mobilize action at the societal level (e.g. raise public awareness) (Africa);

(m) Development of regional and south-south technology transfer activities, enhancement or development of research and development (R&D) programmes within developing countries together with complementary policies to promote technology diffusion, combined with enhanced joint international research and development collaboration programmes;

(n) Enhancement of the capacities of existing national and regional organizations and centres to improve access to information (e.g., on the emerging and the best available technologies and processes for mitigation and adaptation) and to facilitate information sharing and networking among all stakeholders, and dissemination of good practices;

(o) Establishment of information centres and clearing houses; establishment of databases of regional needs and projects (Latin America and the Caribbean);

(p) Expansion of the range of available information (e.g. information on the design requirements for good investment projects, performance data, banking and insurance information (Africa).

I. Needs under the clean development mechanism (CDM)

41. In accordance with Article 12 of the Kyoto Protocol, the purpose of the Clean Development Mechanism (CDM) is to assist Parties not included in Annex I in achieving sustainable development and in contributing to the ultimate objective of the Convention, and to assist Parties included in Annex I in achieving compliance with their commitments under Article 3.[10] Several initial national communications submitted after 1998 (CHL, GEO, IDN NRU, TUV, UZB, FSM) and one submission (BRA) contain references to the role of CDM in promoting sustainable development.

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[10] For capacity-building efforts in the CDM, see FCCC/SB/1999/MISC.11, FCCC/SB/1999/4, FCCC/SB/1999/6, FCCC/SBSTA/1999/INF.8 and FCCC/SBSTA/1999/INF.8/Add.1.

42. The capacity-building needs under the CDM are more clearly expressed in the information submitted by non-Annex I Parties contained in document FCCC/SB/2000/INF.6. These include the following:

(a) Development of a national institutional framework to coordinate action for the acceptance, revision and implementation of CDM projects and which will also serve as a link to the executive board of the CDM (CHL);

(b) Elaboration of studies on specific methodological and institutional aspects of the implementation of the CDM, including the kinds of admissible projects, the issue of project additionality, and establishment of project baselines; studies to evaluate national market opportunities for CDM projects, as well as regarding the definition of additional eligibility criteria, according to national strategies for sustainable development (BRA, CHL);

(c) Enhancing or strengthening of technical capacity in the public and private sectors, including national technical focal points and NGOs to identify, formulate, design, implement, monitor and certify potential emission reduction projects, including accurate and dynamic baseline determination in sectors such as industry and forestry, conduct cost-benefit and sustainability analysis, and emission reduction analysis (BRA, LKA, UZB);

(d) Support for countries to consolidate their existing technical and institutional structures for climate change, including the mechanisms under the Kyoto Protocol, in terms of their human resources and institutions (BOL);

(e) Strengthening of the capacity of the private sector to identify, formulate and design emission reduction projects, as well as monitor and certify emission reductions, in particular for those activities that can potentially contribute the most to achieving sustainable development. Such activities may include renewable energy supply, increased energy efficiency, and establishment of forests and reforestation in areas that have been degraded for many years (BRA);

(f) Strengthening of national authorities and experts, and establishment of corresponding national structures for Kyoto Protocol mechanisms, including raising the awareness of issues related to the implementation of Kyoto Protocol mechanisms at the highest political level, including consultations at the ministerial level (UZB);

(g) Establishment of networking facilities for direct and easy linkage between the donor agency or country and the implementation agency (LKA), and dissemination of the information on the mechanism to the government and the various sectors of civil society (BRA).

43. The list in the annex to decision 10/CP.5 also mentions the need for CDM demonstration projects to enhance capacity-building, data acquisition and sharing, and project negotiation skills, among others.

V. CAPACITY-BUILDING ACTIVITIES AND PROGRAMMES REPORTED IN INITIAL NATIONAL COMMUNICATIONS

44. Many non-Annex I Parties reported various multilateral and bilateral activities and programmes relating to the preparation of their initial national communications, including climate change policy formulation, GHG inventory, vulnerability and adaptation assessment, and mitigation analysis. Some of the activities and programmes mentioned are:

(a) Global Environment Facility (GEF) enabling activities;

(b) Pacific Islands Climate Change Assistance Programme;

(c) United Nations Environment Programme (UNEP) Socio-economic Impacts and Policy Responses resulting from Climate Change - Southeast Asia (IDN);

(d) Indonesian Small Island Study (Bali Study) on Impacts of Climate Change and Policy Response Options to Mitigate and Adapt Climate Change (IDN);

(e) UNEP/GEF Country Case Studies on Sources and Sinks of Greenhouse Gases (SEN);

(f) UNEP/GEF Economics of GHG Limitation (IDN, MUS, SEN);

(g) United Nations Development Programme (UNDP)/GEF Building Capacity in Sub-Saharan Africa to Respond to the UNFCCC (ZWE);

(h) CC:TRAIN (ZWE);

(i) UNDP/Asian Development Bank (ADB)/GEF Asia Least-cost Greenhouse Gas Abatement Strategy (ALGAS) project (IDN);

(j) ADB Indonesian Country Study (Climate Change in Asia Regional Study on Global Environment (IDN);

(k) United States Country Studies Programme (CHL, EGY, FSM, IDN, KAZ, KIR, LKA, MEX, MUS, URY, WSM, ZWE);

(l) Response Action Against the Increasing Emissions in Indonesia, 1991-1992 (IDN);

(m) Climate Change and Forestry, Ecoforestry for Terrestrial CO_2 fixation,1992-1993 (IDN);

(n) Feasibility Study on Sustainable Reforestation of Degraded Grassland in Indonesia, 1995-1996 (IDN).

VI. CONCLUSIONS

45. While the capacity-building needs identified in this note are based on information provided in 23 initial national communications and 5 submissions from non-Annex I Parties, representing a total of 26 non-Annex I Parties, it should be recalled that many of the needs identified had been reported earlier (see FCCC/SBI/1999/11, FCCC/SBI/1999/INF.7 and FCCC/SBI/1999/INF.10).

46. As this note suggests, non-Annex I Parties share many capacity-building needs. However, non-Annex I Parties are not homogeneous and have different experiences and situations in terms of implementing the Convention and the Kyoto Protocol. While this note attempts to highlight the common capacity-building needs of non-Annex I Parties, efforts to support capacity-building should take into account the need for country and regional specificity.

47. Many of the reporting non-Annex I Parties noted the positive role of regional institutions and centres of excellence. As indicated in paragraph 1 (e) of decision 10/CP.5, efforts to facilitate capacity-building should consider the role of regional institutions and centres of excellence in capacity-building in non-Annex I Parties.

48. One commonly expressed requirement for capacity-building is the need for continuity and sustainability of capacity-building efforts. Most of the activities that have taken place in reporting non-Annex I Parties have been project-based in nature. Indeed, many of the reported activities and programmes have concluded. The capacities that have been built during the duration of these projects need to be sustained and further developed.

49. Capacity-building in non-Annex I Parties requires a flexible and focused approach based on the objectives and strategies of the Parties themselves to implement the Convention and the Kyoto Protocol. It needs to be responsive to their existing and emerging needs and evolve as capacities are developed to rise to new challenges.

Annex

Summary table of information on capacity-building needs of non-Annex I Parties

	Areas where capacity-building is needed								
Elements in which capacity would need to be built	UNFCCC and Kyoto Protocol processes	National communication (general issues)	GHG inventory	Vulnerability and adaptation assessments	Abatement options analysis	Research and systematic observation	Public awareness	Development and transfer of technologies	CDM
Institutional strengthening	**BOL, BRA, LKA, WSM**	ARG, **BOL**, **BRA**, CHL, COK, EGY, FSM, GEO, KAZ, LBN, **LKA**, MEX, MUS, NRU, SEN, TUV, URY, **UZB**, VUT, **WSM**, ZWE	ARG, **BRA**, CHL, COK, EGY,FSM, KIR, GEO, JOR, LBN, **LKA**,MUS, NRU, SEN, TUV, URY, UZB, VUT,WSM, ZWE	ARG, **BRA**, CHL, COK, GEO, **KAZ**, LBN, MEX, MUS, NRU, SEN, TUV, URY, UZB, VUT, **WSM**, ZWE	ARG, CHL, GEO, JOR, KAZ, LBN, MEX, MUS, NRU, SEN, TUV, URY, UZB, VUT, WSM, ZWE	ARG, **BOL**, CHL, COK, EGY, FSM, GEO, LBN, **LKA**, MUS, NRU, SEN, TUV, URY, **UZB**, WSM, ZWE	ARG, ARM, CHL, COK, FSM, IDN, KIR, SEN, TUV, URY, WSM	ARG, **BRA**, CHL, EGY, IDN, JOR, , **LKA**, SEN, URY, **UZB**, WSM, Africa; Asia and the Pacific; Latin America and the Caribbean	**BOL**, **BRA**, CHL,GEO, IDN, **LKA**, KAZ MUS, NRU, TUV, **UZB**, WSM
Human resource development (policy, planning, socio-economics, scientific, technical)	**BOL, BRA, LKA, WSM**	ARG, ARM, **BOL**, **BRA**, CHL, COK, FSM GEO, KIR, LBN, **LKA**, MEX, MUS, NRU, SEN, TUV, URY, **UZB**, VUT, **WSM**, ZWE	ARG, ARM, **BRA**, CHL, COK, FSM, GEO, IDN, JOR, KAZ, KIR, LBN, **LKA**, MUS, NRU, SEN, TUV, URY, **UZB**,VUT,**WSM**, ZWE	ARG, ARM, **BRA**, CHL, COK, EGY, FSM, GEO, KIR, LBN, **LKA**, MEX, MUS, NRU, SEN, TUV, URY, UZB, VUT, **WSM**, ZWE	ARG, ARM, CHL, EGY, FSM GEO, KIR, LBN, MUS, NRU, SEN, TUV, UZB, **WSM**, ZWE	ARG, ARM, COK, CHL, EGY, GEO, KIR, LBN, **LKA**, MUS, NRU, SEN, TUV, **UZB**, VUT, WSM, ZWE	ARG, ARM, CHL, COK, FSM, IDN, KIR, SEN, TUV, URY, WSM	ARG, ARM, **BRA**, EGY, FSM **LKA**, MUS, MEX, SEN, URY, Africa; Asia and the Pacific; Latin America and the Caribbean	ARG, **BRA**, CHL, GEO, **LKA**, NRU, TUV, **UZB**, WSM

Summary table of information on capacity-building needs of non-Annex I Parties (continued)

	Areas where capacity-building is needed								
Methodology		ARG, BOL, BRA, CHL, FSM MEX, MUS, SEN, URY, UZB, VUT	ARG, ARM, BRA, CHL, COK, FSM, IDN, JOR, KIR, LKA, MEX, MUS, NRU, ROK, TUV, URY, UZB, VUT, WSM, ZWE	ARG, BOL, BRA, CHL, COK, EGY, FSM,KIR, LKA, MEX, MUS, SEN, URY, UZB, VUT	ARG, BRA, MUS, SEN, URY, UZB	BRA, CHL, LKA, MUS, NRU, UZB		BRA, IDN, LKA, MUS, URY,UZB	BRA, CHL
Technology		ARG, CHL, COK, EGY, FSM, GEO, KAZ, LBN, MEX, MUS, NRU, SEN, TUV, URY, UZB, VUT, WSM, ZWE	ARG, CHL, COK, EGY, FSM, GEO, LKA, MEX, MUS, NRU, SEN, TUV, URY, UZB, VUT, WSM, ZWE	ARG, BRA, CHL, COK, EGY, FSM, GEO, KAZ, LBN, LKA, MEX, MUS, NRU, SEN, TUV, URY, UZB, VUT, WSM, ZWE	ARG, BRA, CHL, COK, EGY, FSM, GEO, KAZ, LBN, LKA, MEX, MUS, NRU, SEN, TUV, URY, UZB, VUT, WSM, ZWE	ARG, CHL, COK, EGY, FSM, GEO, KAZ, LBN, MEX, MUS, NRU, SEN, TUV, URY, UZB, VUT, WSM, ZWE		Africa; Asia and the Pacific; Latin America and the Caribbean	BRA, CHL, GEO, LKA, MUS, NRU, TUV, WSM
Information and networking	BOL, BRA, LKA, WSM, IDN	ARG, BRA, CHL, COK, FSM, GEO, LBN, LKA, MEX, MUS, UZB, VUT, WSM, ZWE	ARG, BRA, CHL, FSM GEO, JOR, KIR, LBN, MUS,VUT, UZB, ZWE	ARG, BRA, CHL, COK, FSM, GEO, LBN, MEX, MUS, UZB, VUT, WSM, ZWE	ARG, BRA, GEO, JOR, LBN, MEX, MUS, UZB, VUT, WSM, ZWE	ARG, GEO, LBN, MUS, NRU, UZB, ZWE	ARG, ARM, BRA, CHL, COK, EGY, FSM, GEO, IDN, JOR, MEX, MUS, KAZ, ROK, SEN, TUV, URY, UZB, ZWE	ARG, BRA, GEO, LKA, MUS, UZB; Africa; Asia and the Pacific; Latin America and the Caribbean	ARG, BRA, GEO, LKA, MUS

WSM: on behalf of AOSIS
Parties in bold refer to information derived from submissions; Parties not in bold refer to information derived from national communications.
The absence of a Party's name in any cell indicates that no information was provided.

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